

What is claimed is:

1. A device for machine tools or measuring apparatus for detecting a spatial position of a carriage movable in a coordinate axis along a guide with respect to a prismatic reference standard of preferably polygonal cross-section, which extends parallel to the guide of the carriage,

wherein said reference standard carries line gratings at least on one first and one second surface, of which at least one is two-dimensional,

wherein provision is made for a position measuring system for determining a spatial position of a support member fixedly connectible with or integrated into the carriage,

wherein the first and second surfaces of the reference standard carry two-dimensional line gratings,

wherein, for detecting the line gratings of the reference standard, the position measuring system comprises:

- a first reading head and, spaced therefrom, a second reading head, which are provided on the support member and associated with a first one of the two-dimensional line gratings;
- a third reading head provided on the support member and associated with a second one of the two-dimensional line gratings; and
- a distance sensor for detecting the distance between the support member and one of the surfaces provided with a two-dimensional line grating or any surface parallel thereto; and

wherein the support member is arranged on the carriage in such manner that the support member is prevented from contacting the reference standard during the detection operation.

2. The device as claimed in claim 1, wherein the first and the second surfaces are two opposed, parallel lateral surfaces of the reference standard.

3. The device as claimed in claim 1, wherein the first and the second surfaces of the reference standard are, respectively, one lateral surface and one end surface arranged at an angle thereto.

4. The device as claimed in claim 1, wherein the distance sensor is provided on the support member in a defined position with respect to the reading heads.

5. The device as claimed in claim 1, wherein the reference standard is made of a temperature-invariant material.

6. The device as claimed in claim 1, wherein the support member is made of a temperature-invariant material.

7. The device as claimed in claim 1, wherein the reference standard is configured for arrangement between two spaced longitudinal guideways forming the guide for the carriage.

8. The device as claimed in claim 1, wherein the reference standard is an elongate rectangular plate.

9. The device as claimed in claim 2, wherein the support member is U-shaped in cross-section and carries on its two U legs the first and second and, respectively, third reading head.

10. The device as claimed in claim 3, wherein the support member is an angle bracket carrying on its two angle arms the first and second and, respectively, third reading head.

11. The device as claimed in claim 1, wherein the third reading head is provided on the support member in such manner that it lies opposite and level with the first or the second reading head with respect to the longitudinal dimension of the reference standard.